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KALMIOPSIS AUDUBON SOCIETY \* NATIVE FISH SOCIETY

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Gina McCarthy  
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Dear EPA Administrator,

We are writing on behalf of dozens of organizations, representing hundreds of thousands of people, regarding the catastrophic failure of the tailings dam at the Mount Polley mine in British Columbia, and the implications for tailings dam design and operational safety at hardrock mines throughout the United States.

**Based on the findings and recommendations of the technical review panel of the Mount Polley tailings dam failure, we urge the EPA to take immediate measures to assess the threat posed by similar tailings dams at existing and proposed mines in the U.S.**

In January, a panel of independent experts released its findings from its investigation of the Mount Polley tailings dam, a modern impoundment that breached on August 2014 and released 25 million cubic meters of tailings into the Fraser River watershed in British Columbia.<sup>1</sup> The panel concluded that the dam failed because of a faulty design that didn't account for the instability of the glacial till on which it was constructed. The failure was complicated by operational practices including storage of excess water in the facility and over-steepening of dam slopes.

The British Columbia Minister of Mines has called for an immediate investigation of all 123 tailings dams within the province and it executed a search warrant at the corporate and mine offices as well as the engineering firms involved in the tailings dam design and management, including AMEC and Knight Piesold.

The results of the Mount Polley investigation are of significant importance to mine management in the U.S. for a number of reasons:

- 1) Like the Mount Polley tailings dam, there are proposed and existing mines in the U.S. that are similarly located on potentially unstable glacial foundation materials, including: the existing Stillwater, East Boulder, Golden Sunlight and proposed Montanore Mine in Montana, and the existing Milepost 7 tailings dam and proposed PolyMet tailings dam in Minnesota.
- 2) Knight Piesold and AMEC, two of the engineering firms involved with the construction and management of the Mount Polley tailings dam,<sup>2</sup> have also been involved with designs at tailings dams within the U.S., including controversial projects such as the proposed Pebble, Rosemont, NorthMet (PolyMet) and Twin Metals mines.<sup>3</sup>
- 3) Long term safety and stability of tailings dams is a crucial public safety issue, yet there's no federal agency responsible for oversight of tailings dam safety and many states impose few if any requirements. The mine tailings dam safety and construction as well as operational guidelines that exist were developed by Canadian industry and are neither specific to nor adequate from a regulatory viewpoint.
- 4) The panel of experts that reviewed the Mount Polley tailings dam failure identified critical risk factors, and made a number of key recommendations. These include:

❖ Creating an independent tailings review board (ITRB) to evaluate tailings dam

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<sup>1</sup> Independent Expert Engineering and Review Panel, Report on Mount Polley Tailings Storage Facility Breach, January 30, 2015. Available at: <https://www.mountpolleyreviewpanel.ca/sites/default/files/report/ReportonMountPolleyTailingsStorageFacilityBreach.pdf>

<sup>2</sup> Hoekstra, Gordon, "More search warrants executed in Mount Polley mine dam failure investigation," Vancouver Sun, February 5, 2015. Available at: <http://www.vancouversun.com/news/More+search+warrants+executed+Mount+Polley+mine+failure/10791264/story.html>

<sup>3</sup> Technical Memorandum, AMEC Geomatrix to Klepfer Mining Services, Poorman Tailings Impoundment Capture Analysis, Montanore Project, November 2010.

designs.

- ❖ Using Best Available Technology (BAT) that fundamentally shifts tailings storage away from tailings ponds that store water to dry tailings, such as recommendations to:
  - Eliminate surface water from the impoundment,
  - Promote unsaturated conditions in the tailings with drainage provisions, and
  - Achieve dilatant conditions throughout the tailings deposit by compaction.
- ❖ Evaluating tailings dam designs for these potential failure modes:
  - Undrained shear failure for dams with silt and clay foundation soils.
  - Water balance adequacy, including provisions and contingencies for wet years.
  - Filter adequacy, especially for dams containing broadly graded soils or mine waste.
- ❖ Applying design, construction and safety standards developed specifically for tailings dams, rather than adapting those used for water retention dams.

5. There are a significant number of large-scale mines proposed in sensitive transboundary regions between Canada and Alaska that could degrade U.S. waters and imperil important fisheries, particularly in the region between British Columbia and Alaska<sup>4</sup> and between Ontario and Minnesota.<sup>5</sup>

Consequently, we urge the EPA to:

- 1) Take immediate measures to reassess the safety, construction and design of existing and proposed tailings dams in the U.S., and to create an independent panel to participate in that review.
- 2) Review the recommendations from the Mount Polley tailings dam review panel, and incorporate their recommendations into the agency's review of existing and proposed mines.
- 3) Support an International Joint Commission review of the transboundary mines, particularly those on the Canada and U.S. border that present a risk to U.S. waters and fisheries.
- 4) Recognize that there are certain places where the downstream values are too great to expose to the risks associated with the placement of a tailings dam that must be maintained in perpetuity.

Given that tailings dams must store mine waste in perpetuity, these facilities warrant the most rigorous review and the stringent standards. The clean up of modern hardrock mines

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<sup>4</sup> Canadian Press, "Alaska Tribal Groups Urge International Commission to Study BC Mine Safety," VanCouver Sun, Feb. 9, 2015.

<http://www.vancouversun.com/business/Alaska+tribal+groups+urge+international+commission+study+mine/10800445/story.html>

<sup>5</sup> International Joint Commission, letter to U.S. Department of State and Foreign Affairs and International Trade Canada, re: transboundary mine issues affecting the International Rainy-Lake of the Woods Watershed, January 22, 2015.

– without dam failures – can cost hundreds of millions of dollars per mine. With failures, reclamation could exceed one billion dollars. These facilities warrant the most rigorous review and the most stringent standards.

We look forward to a response and welcome the opportunity for a more detailed discussion on these matters.

Sincerely,



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